

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 21-11

RESULTS OF ACUTE TOXICITY TESTING WITH Ceriodaphnia dubia

AND Pimephales promelas ON AN APRIL 2021 EFFLUENT SAMPLE

FROM METROPOLITAN WATER RECLAMATION DISTRICT (MWRD)

Metropolitan Water Reclamation District of Greater Chicago	
100 East Erie Street Chicago, Illinois 60611-2803 (312) 751-5600	
RESULTS OF ACUTE TOXICITY TESTING WITH CERIODAPHNIA DUBIA	AAND
PIMEPHALES PROMELAS ON AN APRIL 2021 EFFLUENT SAMPLE FR	
METROPOLITAN WATER RECLAMATION DISTRICT (MWRD)	
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EA Engineering, Science, and Technology, Inc., PBC	
231 Schilling Circle Hunt Valley, Maryland 21031	
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Monitoring and Research Department	
Edward W. Podczerwinski, Director	Iay 2021

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

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6001 WEST PERSHING ROAD CICERO, ILLINOIS 60804-4112

May 4, 2021

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Compliance Assurance Section CAS # 19

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P.O. Box 19276

Springfield, IL 62794-9276

Subject: Biomonitoring Report for 2021 – Acute Toxicity Test Results for the O'Brien

Water Reclamation Plant, National Pollutant Discharge Elimination System

Permit Number IL0028088

The subject Biomonitoring Report including Acute Whole Effluent Toxicity test results for *Pimephales promelas* and *Ceriodaphnia dubia* is submitted in compliance with National Pollutant Discharge Elimination System Permit Number IL0028088, Special Condition 9. The report covers the monitoring done for samples collected in the fifteenth month before the expiration of the permit.

The subject report prepared by EA Engineering, Science, and Technology, Inc., PBC includes copies of all bench sheets, chain-of-custody forms, sample receipt, preparation forms, summary of final results and test information, and quality assurance record.

If you have any questions concerning this report, please contact Mr. Thomas Minarik, Principal Environmental Scientist, at (708) 588-4223.

Very truly yours,

Albert Con

Albert Cox

Environmental Monitoring and Research Manager

Monitoring and Research Department

AC:TM:NK:lf Enclosures

cc: E. Podczerwinski/J. Murray

A. Poonsapaya/H. Zhang

T. Minarik/N. Kollias

Via electronic mail



RESULTS OF ACUTE TOXICITY TESTING WITH Ceriodaphnia dubia AND Pimephales promelas ON AN APRIL 2021 EFFLUENT SAMPLE FROM METROPOLITAN WATER RECLAMATION DISTRICT (MWRD)

Prepared for:

Metropolitan Water Reclamation District of Greater Chicago 6001 W. Pershing Road Cicero, Illinois 60804

Prepared by:

EA Engineering, Science, and Technology, Inc., PBC 231 Schilling Circle Hunt Valley, Maryland 21031 For questions, please contact Michael Chanov ph: 410-584-7000

Results relate only to the items tested or to the samples as received by the laboratory.

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This report contains 8 pages plus 2 attachments

Michael K. Chanov II Laboratory Director

26 April 2021 Date

EA Project Number 70019.TOX



INTRODUCTION

At the request of Metropolitan Water Reclamation District (MWRD), EA Engineering, Science, and Technology performed acute toxicity testing on a composite sample of Outfall 001 final effluent from MWRD's O'Brien Water Reclamation Plant in Skokie, Illinois. The effluent composite sample was collected on 12-13 April 2021. The test organisms, *Ceriodaphnia dubia* (water flea) and *Pimephales promelas* (fathead minnow), were exposed to 100, 50, 25, 12.5 and 6.25 percent effluent, and a laboratory water control. The objective of this study was to assess the acute lethality of the effluent sample to the test species, expressed as a 48-hour (*C. dubia*), or 96-hour (*P. promelas*) median lethal concentration (LC50). This toxicity testing was conducted under the Section 10 biomonitoring requirements of Metropolitan Water Reclamation District's discharge permit number IL0028088.

This toxicity testing was conducted following EA's standard operating procedures (EA 2018) which are in accordance with US EPA guidance (2002). The results of the acute toxicity tests were analyzed using the ToxCalc statistical software package (Version 5.0, Tidepool Scientific Software) and followed US EPA guidance (2002). Summaries of sample and test information are presented on pages 5-6 for *C. dubia* and on pages 7-8 for *P. promelas*. Copies of raw data sheets and statistics are included in Attachment I. The Report Quality Assurance Record is included as Attachment II.

SUMMARY OF RESULTS

The results of the acute toxicity tests indicated that the 12-13 April 2021 Outfall 001 final effluent sample was not acutely toxic to *Ceriodaphnia dubia* or *Pimephales promelas*. The results of these toxicity tests comply with current NELAC standards.

The results of the *C. dubia* acute toxicity test are presented on page 6. After 48 hours, there was 100 percent survival in all of the effluent concentrations and 100 percent survival in the dilution water control. The 48-hour *C. dubia* LC50 for this test was >100 percent effluent (<1.0 TU_a). In the *P. promelas* acute toxicity test (page 8), at the end of 96 hours there was a minimum of 80 percent survival in all of the effluent concentrations. The laboratory control had 95 percent survival. The resulting 96-hour LC50 for *P. promelas* was >100 percent effluent (<1.0 TU_a).

In conformance with EA's quality assurance/quality control program, monthly reference toxicant tests using sodium chloride (NaCl) and potassium chloride (KCl) were performed on the inhouse cultured test species. The results of the *C. dubia* reference toxicant test was acceptable, with a 48-hour LC50 of 2,050 mg/L NaCl, and acceptable control chart limits of 1,608-2,259 mg/L NaCl. The results of the *P. promelas* reference toxicant test was acceptable, with a 48-hour LC50 of 658 mg/L KCl, and acceptable control chart limits of 626-1,237 mg/L KCl.

REFERENCES

- EA. 2018. EA Ecotoxicology Laboratory Quality Assurance and Standard Operating Procedures Manual. EA Manual ATS-102. Internal document prepared by EA's Ecotoxicology Laboratory, EA Engineering, Science, and Technology, Inc., PBC, Hunt Valley, Maryland.
- US EPA. 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms. Fifth Edition. EPA-821-R-02-012. U.S. Environmental Protection Agency, Office of Water, Washington, D.C.

SUMMARY OF SAMPLE/TEST INFORMATION

Test: Ceriodaphnia dubia 48-hour static acute toxicity test

Test Procedure: EA Protocol CD-AC-05

Acute assay with water flea (Ceriodaphnia dubia)

Client Name: Metropolitan Water Reclamation District (MWRD)

Permit Number: IL0028088

Receiving Water: North Shore Channel

Sample Description: Outfall 001 Final Effluent

EA Accession Number: AT1-214

Collection Time and Date: 0600, 12 April 2021 to 0600, 13 April 2021

Receipt Time and Date: 0933, 14 April 2021

Dilution Water Description: Moderately hard synthetic freshwater

EA Test Number: TN-21-214

Test Initiation Time and Date: 1050, 14 April 2021 Test Completion Time and Date: 1040, 16 April 2021

Number of Replicates: 4

Number of Organisms Per Replicate: 5

Test Chamber: 30 ml cup

Volume per Test Chamber: 15 ml

Feeding: None

Organism Lot Information

Lot Number: N/A

Source: EA's Culture Facility (Hunt Valley, Maryland)

Age: <24 hours old

Reference Toxicant Test Information

Reference Toxicant: Sodium chloride (NaCl)

Reference Toxicant Information: Lab Chem Lot#F214-24 (Received 9/7/16)

EA Test Number: RT-21-055

Test Date and Time: 1009, 12 April 2021 to 1040, 14 April 2021

Dilution Water: Moderately hard synthetic freshwater

48-hour LC50: 2,050 mg/L NaCl

Laboratory control chart acceptability range for 48-hour LC50: 1,608-2,259 mg/L NaCl

SUMMARY OF SAMPLE/TEST INFORMATION (continued)

Test Species: Ceriodaphnia dubia (water flea)

Sample Description: Outfall 001 Final Effluent – MWRD

Sample Date: 12-13 April 2021

EA Test Number: TN-21-214

Test Concentration (percent effluent)	48-Hour Survival (percent)
Lab Control	100
6.25	100
12.5	100
25	100
50	100
100	100

48-Hour LC50 (percent effluent): >100 (TUa <1.0)

Water Quality Parameters on Test Solutions	Range
Temperature (°C):	24.0 - 25.4
pH:	7.7 - 8.3
Dissolved Oxygen (mg/L):	8.2 - 9.0
Conductivity (µS/cm):	317 - 1,373

Water Quality Parameters Measured on Sample Upon Receipt Temperature (°C):	Outfall 001 (AT1-214) 1.1
pH:	7.6
Total Residual Chlorine (mg/L):	< 0.01
Alkalinity (mg/L as CaCO ₃):	156
Hardness (mg/L as CaCO ₃):	240
Conductivity (µS/cm):	1,155

SUMMARY OF SAMPLE/TEST INFORMATION

Test: Pimephales promelas 96-hour static renewal acute toxicity test

Test Procedure: EA Protocol FH-AC-05

Acute assay with fathead minnows (Pimephales promelas)

Client Name: Metropolitan Water Reclamation District (MWRD)

Permit Number: IL0028088

Receiving Water: North Shore Channel

Sample Description: Outfall 001 Final Effluent

EA Accession Number: AT1-214

Collection Time and Date: 0600, 12 April 2021 to 0600, 13 April 2021

Receipt Time and Date: 0933, 14 April 2021

Dilution Water Description: Moderately hard synthetic freshwater

EA Test Number: TN-21-213

Test Initiation Time and Date: 1100, 14 April 2021 Test Completion Time and Date: 1150, 18 April 2021

Number of Replicates: 2

Number of Organisms Per Replicate: 10

Test Chamber: 1-L beaker

Volume per Test Chamber: 250 ml

Feeding: 0.2 mL Artemia nauplii at 48 hours

Organism Lot Information

Lot Number: FH1-4/10-11

Source: EA's Culture Facility (Hunt Valley, Maryland) Age: 3-4 days old (hatched within a 24-hour period)

Reference Toxicant Test Information

Reference Toxicant: Potassium chloride (KCl)

Reference Toxicant Information: GFS Lot #19430079 (Received 10/20/20)

EA Test Number: RT-21-052

Test Date and Time: 1204, 6 April 2021 to 1115, 8 April 2021

Dilution Water: Moderately hard synthetic freshwater

48-hour LC50: 658 mg/L KCl

Laboratory control chart acceptability range for 48-hour LC50: 626-1,237 mg/L KCl

SUMMARY OF SAMPLE/TEST INFORMATION (continued)

Test Species: Pimephales promelas (fathead minnow)

Sample Description: Outfall 001 Final Effluent – MWRD

Sample Date: 12-13 April 2021

EA Test Number: TN-21-213

Test Concentration (percent effluent)	48-Hour Survival (percent)	96-Hour Survival (percent)
Lab Control	100	95
6.25	85	80
12.5	100	100
25	100	100
50	95	85
100	90	90

96-Hour LC50 (percent effluent): >100 (TUa <1.0)

Water Quality Parameters on Test Solutions	Range
Temperature (°C):	24.0 - 26.0
pH:	7.6 - 8.3
Dissolved Oxygen (mg/L):	6.3 - 8.5
Conductivity (µS/cm):	315 - 1,179

ATTACHMENT I

Data Sheets and Statistical Analysis (18 pages)



® EA Engineering, Science, and Technology

EA Ecotoxicology Laboratory 231 Schilling Circle



Hunt Valley, Maryland 21031 Telephone: 410-584-7000 Fax: 410-584-1057

110 304-1057	
CHENT: MWROGC	Project No.: 46 S2 -126 -1
NPDES Number: 1L 0028 098	Client Purchase Order Number: 311 941
City/State Collected: Skokic J	Signate Order Number: 5111 Tri

Sample Shipped By: (circle) Fed. Ex. Tracking #: 172744748493835356

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Accession Number (office use only)	Grab		Col Start	lection End	Sample Descr	intion	
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Ya follar Was Sample Chilled D	Ouring Colle	14/13/21		Lat	ceived By Soratory Sun Spyle	Date/Time 4/14/2/	0933

Was Sample Chilled During Collection? (Sec No

Comments:

Sample Collection Parameters

Visual Description: Clear, Gereins

Temperature (°C): 5.6

7.29 pH: TRC (mg/L): O Other:

White-Report Production EA 0534 F&B Rev.11/16

Yellow-Laboratory

Pink-Client/Sampler



SAMPLE CHECK-IN FOR TESTING

Client: MWKD	-	
EA Accession Number: _	AT1-214	

Parameter	Acceptable Range	Weasurement *	Meter	Date	Time	Initials
Temperature (°C)	. ≤4	1-1	T-21	4114121	0934	TP
Is ice present?		yes	N/A	ſ	ſ	
рН	6.0-9.0	7.6	681			
TRC (mg/L)	<0.01	60.01	AT-01			
Visual Description		Clear	N/A	0/	\checkmark	3

^{*}If outside acceptable range, contact project manager.

D 150 4/26/21
for T P

OTHER PARAMETERS IF REQUIRED (SEE STUDY PLAN):

Parameter	Acceptable Range	<i>{√.</i> }	Meter	Date	Time	Initials
Ammonia (preserve aliquot)			N/A			
Parameter	Acceptable Range	Measurement .	Meter	.Date	Time	Initials
Salinity (ppt)		-			' -	

ATS-025 07/24/18



TOXICITY TEST SET-UP BENCH SHEET

Project Number: 70019.TOX	<u> </u>
Client: MWRD	
QC Test Number: TN- 21-213	<u> </u>
TEST ORG	ANISM INFORMATION
Common Name: Fathead minnow	Adults Isolated (Time, Date):
Scientific Name: P. promelas	Neonates Pulled & Fed (Time, Date):
Lot Number: FH1- 4110-11	Acclimation: <24 hrs Age: 3-4 days
Source: ————————————————————————————————————	Culture Water (T/S):25-6 °C 0 ppt

	T	EST INITIA	MON	CONO	CENTRATION SERIE	ES
Date 4/14/21	Time	Initials	Activity	Test Concentration Control	Volume <u>Test Material</u> 0 ml	Final <u>Volume</u> 500 ml
414191	1631	LAD	Dilutions Made	6.25%	31.25 ml	
	(055	TP	Test Vessels Filled	12.5% 25%	62.5 ml 125 ml	
	1100	5	Organisms Transferred	50% 100%	250 ml 500 ml	
V	1141	lano	Head Counts			•

					REPAR	ATION AND FE	EDING	Argus Arro yasal.
	DILU	TION PRE	PARATION				FEEDING	
Day 0 1 2 3 4 5	Date 4/14/21 4/14/21	Time I⇔I OSSI	Initials UNO	Sample / Diluent ATI-DIY TO 1-319 ATI-DIY TO 1-3-19	Food: Day 0 1 2 3 4 5	Artemia Time, Initials, Amount	Time, Initials, Amount MO 6746 3 drops	Time, Initials, Amount

ACUTE TOXICITY TEST DATA SHEET

Project Number: 70019.TOX	70019.TX	XO				ſ	TES	TEST ORGANISM	ANISI	Ā							Beginning Date:	ing D	ate:	7	14/17		Time:		100
Client: MWRD							J	Common Name: Fathead minnow	n Nan	ne: F	thead	minno	W			1	Ending Date:	Date		7	418171	_	. Time:		150
QC Test Number: IN-A	IN-SI		313				J.	Scientific Name:	ic Nar	ne: <u>F</u>	P. promelas	relas				·	TEST TYPE:	IYPE		Static Flowthrough		owthro	ngh		
Test Material: Effluent	fluent						TARGET		VALUES	S									V	Renewal		Non Non	Non-renewal	val	
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Dilution Water: Mod Hard	Mod Har	ų					***	pH:	6.0 - 9.0	0	i	99	Salinity: 0	0			ppt		Test	Test Volume: 250 ml	: 250	ml			
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EPA Test Method: EPA 821-R-02-012 (CHECK ONE)

Eathead: 2000.0 X

Ceriodaphnia: 2002.0

Americanysis: 2007.0 Cynrinodon: 2004.0

Menidia:2006.0 OTHER:

ATS-T01 12/02/08

ACUTE TOXICITY TEST DATA SHEET - OLD SOLUTIONS

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	Fathead minnow	The state of the s	000	Salinity:	Light Intensity: 50 - 100 fc
S ect			J	0	61,8d
TEST ORGANISM	Common Name: Scientific Name:	TARGET VALUES	Temp: 25±1	pH: 6.0 - 9.0	Photoperiod: 161,8 d
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Project Number:	QC Test Number:	Test Material:	Accessic	Dilution Water:	Accessic

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Temperature (°C) 24 48 72 96 25.0 35.4 25.3 35.4 35.0 35.4 25.3 35.4 35.1 35.7 25.6 35.6 35.1 35.7 25.6 36.0 36.0 35.7 25.8 36.0 36.0 35.7 25.8 36.0	진종
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TOXICOLOGY LABORATORY BENCH SHEET

Project Number: 70019.TOX	
Client: MWRD	
QC Test Number: TN- 213	·
Date/Time/Initials	Comments/Activity



RANDOMIZATION CHART

Project Number: _	70019.TOX	
Client:MV	VRD	
QC Test Number:	TN-21-213	

5	4	1	3	6	2
1	5	3	2	4	6



TOXICOLOGY LABORATORY BENCH SHEET - TESTING LOCATION

Project Number:	70019.TOX
Client: <u>MWRD</u>	
QC Test Number:TN	21-313

Day	Testing Location	Date	Time	Initials
0	16	4114121	1100	40
1	16	4/13/21	1057	AT
2	16	4/14/21	1110	CAU
3	16	4/17/21	1020	TO
4	14	4/18/21	1143	A
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TOXICOLOGY LABORATORY CORRECTION BENCH SHEET

Project Number: 70019.TOX
Client: MWRD
QC Test Number: TN- 21-213
Correction Explanations
(a) Technician Error-Mathematical
(b) Technician Error-Manual Data Recording
(c) Technician Error-Head Count Observation
(d) Technician Error-Overwrite
(e) Technician Error-Missing Data
(f) Technician Error-Lost Organism
(g) Technician Error-Transcription Error
(h) Technician Error-Other:
(i) Meter Malfunction



TOXICOLOGY LABORATORY BENCH SHEET

Project Number: 70019.TOX
Client: MWRD
QC Test Number: TN -21- 213, 214

Aliquot of sample warmed to test temperature, then aerated if supersaturated:

			ON.	AIR		T	OFF	AIR	
Date	Samuel #	Initial DO				Final DO		T	$\overline{}$
4114121	Sample #	(mg/L)	Time	Meter	Initials	(mg/L)	Time	Meter	Initials
	AT1-214	10.5	0956	681	TP	8,6	1006	160	uto
4116121	AT1-214	9.7	0800	681	W	8.0	0810	681	TP
					<u> </u>				
	 								
	 								
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TOXICITY TEST SET-UP BENCH SHEET

Project Number: 70019.TOX

Client: MWRD

QC Test Number: TN- 2\ - 2\4

		TEST INITIATION	
Date	Time	Initials	Activity
((₁₄)→1	(03)	UMD	Dilutions Made
	1	1	Test Vessels Filled
	1050	TP	Organisms Transferred
	1128	UAO	Head Counts

TEST SET-UP Sample Number: ATI- 214 Test Concentration Volume Test Material Final Volume Control $0 \, \mathrm{ml}$ 200 ml 6.25% 12.5 mI 12.5% $25 \, \mathrm{ml}$ 25% $50 \, \mathrm{ml}$ 50% $100 \, \mathrm{ml}$ 100% 200 ml

ACUTE TOXICITY TEST DATA SHEET

Project Number: 20019,TOX	OJ. TOX					Ξ.	TEST ORGANISM	RGAI	NISM							Beg	inning	Beginning Date:		4/4/14	Ď	Ξ	Time: 1050	0201	
Client: MWRD							S	mom	Common Name: Water flea	Wate	r flea					Enc	Ending Date:	tte:		4 lieby	18	<u> </u>	Time: 16VO	5	ı
QC Test Number: IN-31-314	N-10-N	1					Scie	ntific	Scientific Name: C. dubia	C.di	ıbia				[EST,	TEST TYPE:		tatic	Static Flowthrough	wthro				ı
Test Material: Effluent	ent	i				Τ.	ARGE	IVA	TARGET VALUES									,) ~	newal		Renewal / Non-renewal	leviral	1	
Accession Number:	١	F	なけ				Temp:	р: 25	25±1		ပွ	ò	DO: >4.0			me/L	ب	E	Comp	Test Container: 30 ml cun	, , ,)	
Dilution Water: Mod Hard	d Hard						pH:	9.0	6.0 - 9.0		I	Sall	Salinity: 0			i ta		Ę	Volu	Test Volume: 15 mi	Į m.				
Accession Number: U1-219	Jet:	Į.	अछ				Pho	operi	Photoperiod: 16 l, 8 d	1,8 d		Ligi	it Inte	Light Intensity: 50 - 100 fc	0-10	- P		Teg	t Dura	Test Duration: 48 hrs	8 brs				
			Liv	Number of Live Organisms	r of nisms			Ĕ	Temperature (°C)	fure				Ha	ĺ			vlossi	Dissolved Oxygen	gen	-	Cond	tctivity	Conductivity (µS/cm)	<u>اء</u>
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Fathead: 2000.0 Trout: 2019.0 EPA Test Method: EPA 821-R-02-012 (CHECK ONE)

Ceriodaphnia: 2002.0 X Magna/pulex: 2021.0

Americamysis: 2007.0 Cyprinodon: 2004.0

Menidia:2006.0 OTHER:

ATS-T01 12/02/08

ACUTE TOXICITY TEST DATA SHEET

Project Number: 70019.TOX	Z0019.T	XO.					TES.	TEST ORGANISM	ANIS	M						_	Beginning Date:	ing D≀	ige:	नार्धा			Time: 1050	\bar{s}	3
Client: MWRD							J	Commo	n Nar	Common Name: Water flea	ater fl	89					Ending Date:	Date		5	4,11		Time.		Chig
QC Test Number: IN- 21-314	NI.	6-15	2				J 2	Scientific Name:	fic Nai	ne: C	C.dubia	_				TES	TEST TYPE:	Ä		Static / Flowthrough	Flowd	hrough		t	
Test Material: Effluent	fluent					ļ	TARGET	GET V	VALUES	S										Renev	val /	\ <u>\$</u>	Renewal / Mon-renewal		^
Accession Number:	mber:	Æ	AT1-214	3			ר	Temp: <u>25±1</u>	25±1		S		DO: >4.0	4.0			mg/L		Test C	Test Container: 30 ml cup	л: 30	lm Cent			
Dilution Water: Mod Hard	Aod Han	p					14	pH:	6.0 - 9.0	0.		Ø	Salinity: 0	0		-	ppt		Fest V	Test Volume: 15 ml	15 m	_	1		
Accession Number:	mber:	9	101-21B	370		ŀ	1	hotop	eriod:	Photoperiod: 16 l, 8 d	p	Ι	ight Is	Light Intensity: 50 - 100 fe	7:50-	100 fc			Test D	Test Duration: 48 hrs	48 h	2			
			Live	Number of ve Organist	Number of Live Organisms		<u> </u>	Tei	Temperature (°C)	ure				Ha				vissolv	Dissolved Oxygen	/gen	-	Cond	Conductivity (µS/cm)	o/Sul)	ÎI
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EPA Test Method: EPA 821-R-02-012 (CHECK ONE)

Fathead: 2000.0 Trout: 2019.0 Certodaphnig: 2002.0 X Magna/pulex: 2021.0

Americamysis: 2007.0 Cyprinodon: 2004.0

Menidia-2006.0 OTHER:

ATS-T01 12/02/08



TOXICOLOGY LABORATORY BENCH SHEET

Project Number:70019.TOX		
Client: MWRD		
QC Test Number: TN-N-214		
Date/Time/Initials	Comments/Activity	



RANDOMIZATION CHART

Project Number: _	70019.TOX
Client: MW	/RD
QC Test Number:	TN-21-214

5	4	1	3	6	2
1	5	3	2	4	6
6	2	4	1	5	3
4	1	2	6	3	5



TOXICOLOGY LABORATORY BENCH SHEET - TESTING LOCATION

Project Number:	70019.TOX
Client:MWRD	
QC Test Number:TN- 🗟	1-914

			<u> </u>	
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TOXICOLOGY LABORATORY CORRECTION BENCH SHEET

Project Number:70019.TOX
Client: MWRD
QC Test Number:TN- 21-214
Correction Explanations
(a) Technician Error-Mathematical
(b) Technician Error-Manual Data Recording
(c) Technician Error-Head Count Observation
(d) Technician Error-Overwrite
(e) Technician Error-Missing Data
(f) Technician Error-Lost Organism
(g) Technician Error-Transcription Error
(h) Technician Error-Other:
(i) Meter Malfunction

ATTACHMENT II

Report Quality Assurance Record (2 pages)



REPORT QUALITY ASSURANCE RECORD

Clie	ent: MWRD	Project Number:	70019.TOX
Aut	hor: Rachael Brooks	EA Report Number:	8542
	REPOR	RT CHECKLIST	
	OA/OC ITEM	REVIEWER	DATE
1.	Samples collected, transported, and received according to study plan requirements.	Just K	4/19/2021
2.	Samples prepared and processed according to study plan requirements.	And h	4/19/2021
3.	Data collected using calibrated instruments and equipment.	Jul R	4/19/2021
4.	Calculations checked: - Hand calculations checked	de A	4/19/2021
	 Documented and verified statistical procedure used. 	ful L	4/19/2021
5.	Data input/statistical analyses complete and correct.	Jess M Rediff	4/25/2021
6.	Reported results and facts checked against original sources.	Just M Redol S	4/25/2021
7.	Data presented in figures and tables correct and in agreement with text.	Sess M. Reelifos	4/25/2021
8.	Results reviewed for compliance with study plan requirements.	and L	4/19/2021
		AUTHOR	DATE
9.	Commentary reviewed and resolved.	fland R	4/26/2021
	All study plan and quality assurance/control requirements have been met and the report is approved	1. 1.	
	roquirono navo bossi moi anti mo roport is approved	PROJECT MANAGER	4/26/24 DATE
		Jus M Redy	4/25/2021
		WHILE WHILE	1/26/24
		SENIOR TECHNICAL OFFICER	DATE